

WHAT IS CLAIMED IS:

1. An electronic camera comprising:  
an imaging element which photo-electrically  
converts an object field light;

5 a timing generator including an internal register  
in which timing of a drive signal used to operate the  
imaging element can be programmed;

a power supply control portion which supplies a  
second voltage to the imaging element when a predeter-  
10 mined time has elapsed after supply of a first voltage  
to the timing generator; and

a control portion which starts at least program  
setting in the internal register of the timing  
generator after elapse of a time that the timing  
15 generator requires to operate stably at the first  
voltage and before elapse of a time that the imaging  
element requires to operate stably at the second  
voltage.

2. The electronic camera according to claim 1,  
20 wherein, in the program setting in the internal  
register of the timing generator, the control portion  
sets timing of the drive signal concerning a monitor  
mode prior to any other value.

3. The electronic camera according to claim 2,  
25 wherein, in the program setting in the internal  
register of the timing generator, the control portion  
terminates at least setting of the timing of the drive

signal concerning the monitor mode before an elapse of the time required for the imaging element to start up and perform a stable operation.

4. The electronic camera according to claim 1,  
5 wherein, in the program setting in the internal register of the timing generator, the control portion terminates at least setting of the timing of the drive signal concerning the monitor mode before an elapse of the time required for the imaging element to start up  
10 and perform a stable operation.

5. An electronic camera comprising:  
an imaging element which photo-electrically converts an object field light;

a timing generator including an internal register  
15 in which timing of a drive signal used to operate the imaging element can be programmed;

a power supply control portion which supplies a second voltage to the imaging element when a predetermined time has elapsed after supply of a first voltage  
20 to the timing generator; and

a control portion which performs program setting in the internal register of the timing generator, reads and verifies a set value after elapse of a time that the timing generator requires to operate stably at  
25 the first voltage and before elapse of a time that the imaging element requires to operate stably at the second voltage.

6. An electronic camera comprising:

an imaging element whose handling electric charge quantity can be changed;

5 a voltage control portion which controls a substrate voltage used to change the handling electric charge quantity of the imaging element;

a read portion which controls an operation to take out electric charges stored in each pixel of the imaging element and read them as an image signal to the  
10 outside;

an amplification portion which amplifies the image signal read by the read portion; and

a voltage control inhibition portion which inhibits a control over the substrate voltage by the  
15 voltage control portion when an amplification factor of the amplification portion is not less than a predetermined value.

7. The electronic camera according to claim 6, wherein the voltage control portion controls the  
20 substrate voltage in such a manner that the handling electric charge quantity when performing moving picture display becomes smaller than that when performing still picture display.

8. The electronic camera according to claim 6, wherein the voltage control portion controls the  
25 substrate voltage in such a manner that the handling electric charge quantity at the time of field storage

becomes smaller than that at the time of frame storage.

9. An electronic camera comprising:

an n:1 (n is a natural number not less than 3)  
interlace read type imaging element which can read  
5 electric charges of a plurality of two-dimensionally  
arranged photodiodes to the outside through a transfer  
path;

an unnecessary electric charge flushing portion  
used to transfer unnecessary electric charges stored  
10 in the transfer path at a normal speed through the  
transfer path;

a signal read portion which reads the electric  
charges of the photodiodes to the outside of the  
imaging element after flushing the unnecessary electric  
15 charges; and

a conversion portion which converts a signal read  
by the signal read portion into a video signal,

wherein the unnecessary electric charge flushing  
portion transfers the unnecessary electric charges  
20 stored in the transfer path at a normal speed through  
the transfer path in a period after end of exposure of  
the imaging element before reading the electric charges  
of the photodiode to the transfer path.

10. The electronic camera according to claim 9,  
25 further comprising a clamp portion which clamps a black  
level of the video signal while the unnecessary  
electric charge flushing portion flushes the

unnecessary electric charges.

11. The electronic camera according to claim 10,  
wherein the unnecessary electric charge flushing  
portion determines the period to transfer the  
5 unnecessary electric charges in accordance with  
brightness of an object.

12. The electronic camera according to claim 10,  
wherein the electronic camera has a rapid sequence  
mode, and the unnecessary electric charge flushing  
10 portion sets the period to transfer the unnecessary  
electric charges when taking pictures in the rapid  
sequence mode shorter than that when transferring the  
unnecessary electric charges in any other mode.

13. The electronic camera according to claim 10;  
15 wherein the unnecessary electric charge flushing  
portion determines the period to transfer the  
unnecessary electric charges in accordance with a time  
required for a clamp operation of the clamp portion to  
be stabilized.

20 14. The electronic camera according to claim 10,  
wherein the unnecessary electric charge flushing  
portion determines the period to transfer the  
unnecessary electric charges based on a longer one of  
a time required to completely flush the unnecessary  
25 electric charges and a time required for the clamp  
operation to be stabilized.

15. The electronic camera according to claim 9,

wherein the unnecessary electric charge flushing portion determines the period to transfer the unnecessary electric charges in accordance with the brightness of an object.

5           16. The electronic camera according to claim 9, wherein the electronic camera has a rapid sequence mode, and the unnecessary electric charge flushing portion sets the period to transfer the unnecessary electric charges when taking pictures in the rapid  
10 sequence mode shorter than that when transferring the unnecessary electric charges in any other mode.

17. An electronic camera comprising:

an n:1 (n is a natural number not less than 3) interlace read type imaging element which can read  
15 electric charges of a plurality of two-dimensionally arranged photodiodes to the outside through a transfer path;

an unnecessary electric charge flushing portion used to transfer unnecessary electric charges stored  
20 in the transfer path at a normal speed through the transfer path;

a signal read portion which reads the electric charges of the photodiodes to the outside of the imaging element after flushing the unnecessary electric  
25 charges; and

a conversion portion which converts a signal read by the signal read portion into a video signal,

wherein the unnecessary electric charge flushing portion has a frame period in which the unnecessary electric charges stored in the transfer path are transferred at a normal speed through the transfer path after end of exposure of the imaging element and before reading the electric charges of the photodiodes to the transfer path.

18. The electronic camera according to claim 17, further comprising a clamp portion which clamps a black level of the video signal while the unnecessary electric charge flushing portion is flushing the unnecessary electric charges.

19. The electronic camera according to claim 18, wherein the unnecessary electric charge flushing portion determines the frame period to transfer the unnecessary electric charges in accordance with brightness of an object.

20. The electronic camera according to claim 18, wherein the electronic camera has a rapid sequence mode, and the unnecessary electric charge flushing portion sets the frame period to transfer the unnecessary electric charges when taking pictures in the rapid sequence mode shorter than that when transferring the unnecessary electric charges in any other mode.

21. The electronic camera according to claim 18, wherein the unnecessary electric charge flushing

portion determines the frame period to transfer the unnecessary electric charges in accordance with a time required for a clamp operation of the clamp portion to be stabilized.

5           22. The electronic camera according to claim 18, wherein the unnecessary electric charge flushing portion determines the frame period to transfer the unnecessary electric charges based on a longer one of  
10           a time required to completely flush the unnecessary electric charges and the time required for the clamp operation to be stabilized.

          23. The electronic camera according to claim 17, wherein the unnecessary electric charge flushing portion determines the frame period to transfer the  
15           unnecessary electric charges in accordance with brightness of an object.

          24. The electronic camera according to claim 17, wherein the electronic camera has a rapid sequence mode, and the unnecessary electric charge flushing  
20           portion sets the frame period to transfer the unnecessary electric charges when taking pictures in the rapid sequence mode shorter than that when transferring the unnecessary electric charges in any other mode.